ADMINISTRATIVE NOTE:
NEW REQUIREMENTS/PROCEDURES

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BAA 02-09 PROPOSER INFORMATION PAMPHLET

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The Defense Advanced Research Projects Agency (DARPA) often selects its research efforts through the Broad Agency Announcement (BAA) process. The BAA will appear first on the FedBizOpps web site. The following information is for those wishing to respond to the Broad Agency Announcement.

HIGH PRODUCTIVITY COMPUTING SYSTEMS (HPCS) INDUSTRY STUDY, SOL BAA 02-09, DUE: 02/05/03; POC: MR. ROBERT B. GRAYBILL, DARPA/ITO; FAX: (703) 522-7161

The *High Productivity Computing Systems* (HPCS) program is pursuing the research and development of viable high productivity computing system solutions that will fill a DoD high-end computing gap between today's late 80's based technology High Performance Computing (HPCs) and the promise of quantum computing. DARPA's 'Grand Challenge" is to develop a broad spectrum of innovative technologies, integrated into a balanced total system solution by the end of this decade. The end product will be economically viable high productivity computing systems with both scalable vector and commodity HPC system functionality for the national security and industrial user communities with the following design attributes:

- **Performance:** Improve the computational efficiency and performance of critical national security applications by 10X to 40X over today's scalable vector and commodity high performance solutions for systems comprised of ten's to thousands of computing nodes.
- **Productivity:** Reduce the cost of developing, operating, and maintaining HPCS application solutions.
- **Portability:** Insulate research and operational HPCS application software from system specifics.
- **Robustness:** Deliver improved reliability to HPCS users and reduce risk of malicious activities.

To achieve this goal, this program must address three overarching issues impeding the development and utilization of high-end computational systems:

- **Balanced System Performance:** The increasing imbalance among processor speed, communications performance, data access, power consumption, and heat removal is resulting in high-end systems that are chronically inefficient for large-scale applications. This effect increases the time to solution and the cost of programming, operation, and facilities acquisition (*e.g.*, cooling, power, and floor space).

- **Improved Software Tools and Methodologies:** There exists a critical need for improved software tools, standards, and methodologies for effective utilization of multi-processor computers. As multi-processor systems become pervasive throughout the DoD, such tools will reduce software development and maintenance, a major cost driver for many Defense system acquisitions.
- **Reinvigorate the HPCS Research Community:** Challenge the high-end hardware and software communities to develop a new generation of researchers, engineers, and leaders to drive the advancement, development, and application of new high-end architectures and tools throughout the decade.

High performance computing is at a critical juncture. Over the past three decades, this important technology area has provided crucial superior computational capability for many important national security applications. Government research, including substantial DoD investments, has enabled major advances in computing, contributing to U.S. dominance of the world computer market. Unfortunately, current trends in commercial high performance computing, future complementary metal oxide semiconductor (CMOS) technology challenges, and emerging threats are creating technology gaps that threaten continued U.S. superiority in important national security applications.

As reported in recent DoD studies, there is a national security *requirement* for high productivity computing systems. Without government R&D and participation, high-end computing will be available only through commodity manufacturers primarily focused on mass-market consumer and business needs.

The HPCS program will significantly contribute to DoD and industry information superiority in the following critical applications areas: operational weather and ocean forecasting; planning exercises related to analysis of the dispersion of airborne contaminants; cryptanalysis; weapons (warheads and penetrators); survivability/stealth design; intelligence/surveillance/reconnaissance systems; virtual manufacturing/failure analysis of large aircraft, ships, and structures; and emerging biotechnology. The HPCS program will create and supply new systems and software tools that will lead to increased productivity of the applications used to solve these critical problems.

Throughout all phases of this effort, DoD operational and research software applications will serve as the requirements driver for architecture and software research and systems assessment. Industry adoption is seen as a central strategy to ensure that cost-effective solutions are made available to the national security community. The end result will be responsive hardware and software systems dynamically balanced for diverse set of high-end national security applications, rather than the loosely coupled fixed design point solutions or clusters commonly available today.

TECHNICAL AREAS of particular interest to the HPCS solicitation are the technical topic areas listed below. The HPCS program will address the current technical challenges that confront both development and use of current high-end systems and applications, such as programming productivity, performance, portability, scalability, reliability, and tamper resistance. A balanced technology and system development effort will be required across all of the technology elements, technical challenges, and three programmatic thrusts. Performance characterization, metric development, technology go no/go criteria, and prediction activities, along with end user and industry involvement will provide active feedback required to meet the challenging R&D program goals. The HPCS core technical challenges are outlined below and are the underlying basis for the program tasks.

- **High effective bandwidth:** Focus the attention of academia and industry on high bandwidth/low latency hierarchical memory systems based upon future CMOS and other emerging technologies.
- **Balanced system architecture:** Scalable computer systems should be designed from an overall system perspective, balancing the performance of processors, memory systems, interconnects, system software, and programming environments.
- **Robustness strategy:** Address system brittleness and susceptibility of large complex computing systems by exploring balanced system hardware and software reliability/fault tolerance capabilities, active application software bug tolerance, and intrusion identification and resistance techniques.
- **Performance measurement and prediction:** Develop a new class of metrics and benchmarks to measure and predict performance of system architecture and applications software.
- **System tailorability:** To improve system efficiency for a broader class of user applications, hardware and software characteristics must adapt and optimize to changing workload and user requirements. Examples of tailorable features include support for multiple programming models, selectable machine abstractions, and configurable software/hardware architectures.

The proposed technology development plan is part of a three phase program that may extend up to the end of this decade. The three phases are concept study, research and development (R&D), and full scale development. The major overall objective is to provide high productivity computing system solutions to fill both a technology and a high-end computing platform gap for national security missions that will exist by the end of this decade and into the next decade. Early identification of high-end computing application computing requirements, metrics, and performance prediction tools will be used throughout the program to assess both technical and schedule progress. Structured industry concept, system design, and preliminary design reviews in concert with corresponding critical technology identification and assessments will be performed.

The Phase 1 concept study solicitation is focused on the identification of critical technologies and candidate system concepts required for the follow on R&D and full scale development phases. Research is sought in the following technical areas consistent with Phase 1 industry concept study goals.

1) **Industry R&D**: The key tasks are to perform HPCS system concept studies resulting in a final concept review and Phase 2 recommendations by the end of Phase 1. The successful execution of this task is dependent on the ability to develop a balanced total solution by incorporating HPCS application and end user requirements, development of meaningful, scalable productivity "*value*" metrics, identification and assessment of critical technologies (Tasks 2 and 3), and leveraging research efforts being performed by universities, research laboratories, and government agencies. The challenge will be to develop concepts for a "productive" system that will have the ability to double in *value* every 18 months, not just peak performance (Moore's Law), over the next two decades. Throughout this effort, DoD operational and research software applications will serve as the requirements driver for architecture and software research and systems assessment. Industry adoption is seen as a central strategy to ensure that cost-effective solutions are made available to the national security community.

Example areas addressed would include:

- Develop, analyze and project candidate HPCS concepts and composition: processors, memory, interconnects, system software, and programming environments from an industry point of view.
- Identify R&D required for a Phase 2 in preparation for the development of a system design and a preliminary design in support of HPCS system-level long-term objectives

2) **Technology Component:** The major technology areas requiring development in support of the next generation of productivity systems are: (1) System Architecture; (2) Programming Models; (3) Software Technology; and (4) Hardware Technology. It is expected that a full assessment will be made of complementary research that will be performed as a result of related HPCS solicitation developments, active complementary DARPA technology projects, industry developments, and government agency research.

    a. *Systems Architecture Component:* Many current high-end systems adopt a design philosophy of "build the hardware, worry about the rest later." Many complex simulation codes demonstrate poor computational efficiency as a result of unbalanced systems. This is a very real issue because the physical sizes of our current teraflop systems are starting to exceed our capacity to facilitate and maintain these large machines. Fundamental to the problem is the imbalance between processor speed and system latency and bandwidth. For complex simulations, this imbalance can result in applications software with poor scalability (utilizing less than a dozen processors for optimized codes) and poor single processor performance (as low as 1% of peak processor performance). In addition, industry is just starting to acknowledge that there is a serious concern that Moore's Law, the doubling of microprocessor performance every 18 months, will not continue through this decade. Challenging chip power density issues plus the expected saturation of arithmetic capacity threaten to slow annual processors performance increases from approximately 60% to under 20%. New and innovative ideas in computer architecture will be required to maintain the current pace of CPU performance improvement. Fortunately, recent research indicates

that significant gains may still be achieved by increasing the "effective" productivity of current high-end solutions.

The HPCS program embodies a holistic approach to high-end system architecture and design, promoting adaptability and scalability to provide a balanced system for a broad application space. Adaptable systems involve either software adapting to a given hardware environment or a hardware environment adapting to a given software load. Current efforts on software adaptability are beginning to pay dividends in the area of automatically choosing good implementations of algorithms for a given architecture and available computing resources. A good example of automation of resource utilization is ATLAS. ATLAS automatically chooses the best implementation of basic linear algebra functions for any hardware/compiler combination. Examples of early research in adaptive micro-architectures are the DARPA's Data Intensive Systems (DIS) and Polymorphous Computing Architectures (PCA) programs. DIS primarily focuses on the processor memory subsystem bottleneck by exploring processor-in-memory, adaptive caches, and adaptive algorithms. The HPCS R&D program will leverage this early research and extend it by creating fully adaptable high-end systems that mutually seek the best operating point for a given problem.

b. *Programming Models Component*: A critical aspect of productivity is the ability to provide an abstraction of actual computing systems that allow programmers to concentrate on a simple and portable target for their efforts. For many years, there have been two dominant programming models used in high performance computing systems: message passing and shared memory. The message-passing model is attractive because of its performance and widespread adoption throughout industry, while the shared memory model is generally considered easier to use. Each of these models is relatively low level and disconnected from the domain of most scientists and engineers, but at the same time they have real performance implications. Such fixed-architecture compromises in software/middleware/hardware design are common in today's high-end computing systems. As a result, a key attribute of an HPCS is the ability to support more than one programming model, being transparent to the user, while adapting the underlying system architecture to efficiently select a different virtual machine and corresponding hardware/software micro-architecture. Research efforts in the programming model area should focus on obtaining new and/or enhanced models that ease use while not sacrificing overall performance of the system.

c. *Software Technology Component:* New innovative programming models and architectures need to be developed to investigate and implement software tools for program production and understanding. Program production tools allow programmers to rapidly produce new programs and adapt old ones to new problems. Such tools would include traditional techniques such as compilers, development environments, and library definitions. In addition, the adaptation of new model abstractions, middleware, and tools into domain-specific frameworks will also merit investigation. Program understanding tools allow both programmers and users of programs to quickly gain insight into both correctness and performance. Research is required in offline and online tool suites to predict, measure, and profile target application characteristics for a specified programming model and associated virtual machine architecture instantiation. This capability enables the understanding of new programming models and virtual machine architecture abstractions through simulation before hardware delivery. Another promising research topic is derived from the ability to perform online profiling correctness to support software bug tolerance and intrusion resistance capability. Finally, enhancements to operating and runtime systems will be required to support these objectives.

d. *Hardware Component:* In developing the required hardware components necessary for future high productivity computing systems, system architects are encouraged to research and evaluate a range of hardware technologies in order to achieve a balanced system level architecture and programming environment. Architects should make distinctions among three classes of components: 1) the class of components where commodity COTS technologies are appropriate; 2) the class of components where modified COTS or Intellectual Property (IP) core technology can be leveraged; and 3) the class of components where technology gaps are identified and new micro-architectures, chips, network elements, memory devices, and packaging techniques need to be developed. Suggested technology areas for investigation and evaluation include, but are not limited to, photonics technology, storage and memory technology (*e.g.*, magnetic memory, processing in memory, holographic memory), communications infrastructure, power conversion and power efficiency, and energy/thermal management techniques.

3) **Application Analysis and Performance Assessment Component:** Key to the research and development of new high productivity computing systems is the ability to measure and understand critical performance characteristics for the entire system – both hardware and software. The ability to characterize and predict performance will provide a clearer picture of future hardware and software requirements and serves as a critical basis for evaluation and development of high-end systems. Therefore, it is vital that a broad spectrum of potential HPCS applications be analyzed to extract the key HPCS system design characteristics, parameters, constraints and programming environments.

Example areas addressed would include:

- Involve the broader HPC user community, developers, and agencies in developing the target suite of applications.
- Identify critical HPC applications and their respective computing system performance drivers, preferred machine abstractions, and overall requirements.
- Define HPCS metric composition leading up to the definition of "value."
- Develop tools to predict the performance "value" of applications on a given HPCS architecture.
- Develop scalable tools to measure and understand critical performance characteristics of complete systems to include hardware, software, I/O rates, system bandwidth, and communication latencies.
- Perform analysis of the target application codes to develop and refine lightweight/low-cost synthetic scalable benchmarks used by acquisition, development and vendor communities to characterize performance.

PROGRAM SCOPE

The Phase 1 efforts envisioned under this BAA will be 12-month concept studies with an expected start in 3QFY02. HPCS proposers shall address all three tasks and pursue a balanced technology and system development path. Up to five awards under this BAA are expected with each award to fall in the range of $2.5 Million and $3 Million. Each selected activity will incorporate support for two HPCS Principal Investigators' meetings and up to three program effort reviews plus a number of technology review meetings intended to enable the consideration of other relevant research activities. Additional HPCS background information is available on http://www.darpa.mil/ito/research/hpcs.html. In addition, the efforts funded under this BAA shall specifically consider and examine technologies being investigated and advanced by the ongoing DARPA Data Intensive Systems (DIS) and Polymorphous Computing Architectures (PCA) programs. Data on these programs can be found at the DARPA ITO web site.

Deleted: our

Proposed research should pursue and enable revolutionary advances in the state-of-the-art. Proposals are not limited to the specific strategies listed above, alternative visions will be considered. However, proposals should be for research that substantially contributes towards the development and advancement of HPCS capabilities at an integrated, system level. Specifically excluded is research that primarily results in evolutionary improvement to the existing state of practice or focuses on an extremely narrow or limited specific system or solution. Integrated solution sets embodying significant technological advances are strongly encouraged over narrowly defined endeavors.

SUBMISSION PROCESS

The Defense Advanced Research Projects Agency/Information Technology Office (DARPA/ITO) requires completion of a **Broad Agency Announcement (BAA) Cover Sheet Submission** for each Proposal, by accessing the URL below:

http://www.dyncorp-is.com/BAA/index.asp?BAAid=02-09

After finalizing the **BAA Cover Sheet Submission**, the proposer must submit the **BAA Confirmation Sheet** that will automatically appear on the web page. Each proposer is responsible for printing the BAA Confirmation Sheet and submitting it attached to the "original" and each designated number of copies. The Confirmation Sheet should be the first page of your Proposal. Failure to comply with these submission procedures may result in the submission not being evaluated.

An original and **4** copies of the full proposal, and **2** electronic copies (i.e., **2** separate disks) of the full proposal (in Microsoft Word '97 for IBM-compatible, PDF, Postscript, or ASCII format on one 3.5-inch floppy disk or one 100 MB Iomega Zip disk). Each disk must be clearly labeled with BAA 02-09, proposer organization, proposal title (short title recommended) and Copy (Number) of **2**. The full proposal (original and designated number of hard and electronic copies) must be submitted to the administrative address for this BAA in time to reach DARPA by 4:00 PM (ET) **Friday, March 22, 2002**, in order to be considered during the initial evaluation phase. Proposals must not be submitted by fax or e-mail; any so sent will be disregarded. The BAA will remain open until 4:00 PM (ET), Wednesday, February 5, 2003. Proposals submitted after the March 22, 2002 initial deadline will be evaluated by the Government, but the likelihood of their being funded is less than for proposals submitted in accordance with the initial evaluation and award schedule. DARPA will acknowledge receipt of submissions and assign control numbers that should be used in all further correspondence regarding proposals.

Restrictive notices notwithstanding: Proposals may be handled, for administrative purposes only, by a support contractor. This support contractor is prohibited from competition in DARPA technical research and is bound by appropriate non-disclosure requirements.

EVALUATION AND FUNDING PROCESSES

Proposals will not be evaluated against each other, since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons. For evaluation purposes, a proposal is the document described in PROPOSAL FORMAT Section I and Section II (see below). Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

Evaluation of proposals will be accomplished through a scientific review of each proposal using the following criteria, which are listed in descending order of relative importance:

(1) Overall Scientific and Technical Merit: The overall scientific and technical merit must be clearly identifiable. The technical concept should be clearly defined and developed. Emphasis should be placed on the technical value of the development and experimentation approach.

(2) Innovative Technical Solution to the Problem: Proposed efforts should apply new or existing technology in a new way such as is advantageous to the objectives. The plan on how offeror intends to get developed technology and information to the user community should be considered.

(3) Potential Contribution and Relevance to DARPA Mission: The offeror must clearly address how the proposed effort will meet the goals of the undertaking. The relevance is further indicated by the offeror's understanding of the operating environment of the capability to be developed.

(4) Offeror's Capabilities and Related Experience: The qualifications, capabilities, and demonstrated achievements of the proposed principals and other key personnel for the primary and subcontractor organizations must be clearly shown.

(5) Plans and Capability to Accomplish Technology Transition: The offeror should provide a clear explanation of how the technologies to be developed will be transitioned to capabilities for military forces. Technology transition should be a major consideration in the design of experiments, particularly considering the potential for involving potential transition organizations in the experimentation process.

(6) Cost Realism: The overall estimated cost to accomplish the effort should be clearly shown as well as the substantiation of the costs for the technical complexity described. Evaluation will consider the value to Government of the research and the extent to which the proposed management plan will effectively allocate resources to achieve the capabilities proposed.

It is the Government's intention that proposals will be reviewed by Government and non-Government personnel; however, contractors will not be used to conduct evaluations or analyses of any aspect of a proposal submitted under this BAA, unless one of the three conditions identified in FAR 37.203(d) applies.

As soon as the proposal evaluation is completed, the proposer will be notified of selectability or non-selectability. Selectable proposals will be considered for funding; non-selectable proposals will be destroyed. (Copies of non-selectable proposals may be retained for filing purposes.) Not all proposals deemed selectable will be funded. Decisions to fund selectable proposals will be based on funds available, scientific and technical merit, and potential contribution and relevance to DARPA's mission and offeror's capabilities and expertise. In addition, proposal funding decisions may be based on research efforts most relevant to program goals. DARPA may retain some selectable proposals for a period of up to one year,

in order to reconsider those proposals for funding. Submitters of those retained proposals will receive notification to that effect.

The Government reserves the right to select for award all, some, or none of the proposals received. Proposals identified for funding may result in a contract, grant, cooperative agreement, or other transaction depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. If warranted, portions of resulting awards may be segregated into pre-priced options.

GENERAL INFORMATION

Proposals not meeting the format described in this pamphlet may not be reviewed. Proposals **MUST NOT** be submitted by fax or e-mail; any so sent will be disregarded. The FedBizOpps notice, in conjunction with this pamphlet, BAA 02-09 Proposer Information Pamphlet (PIP) and all references, constitutes the total BAA. No additional information is available, nor will a formal Request for Proposal (RFP) or other solicitation regarding this announcement be issued. Requests for same will be disregarded. All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for HBCU and MI participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities.

NEW REQUIREMENTS/PROCEDURES: The Award Document for each proposal selected and funded will contain a mandatory requirement for submission of DARPA/ITO Quarterly Status Reports and an Annual Project Summary Report. These reports, described below, will be electronically submitted via the DARPA/ITO Technical – Financial Information Management System (T-FIMS), utilizing the government furnished Uniform Resource Locator (URL) on the World Wide Web (WWW).

(a) Status Report: Due at least three (3) times per year – Jan, Apr, & Oct
  1) Technical Report
    a) Project General Information
    b) Technical Approach
      - Accomplishments
      - Goals
      - Significant changes / improvements
    c) Deliverables
    d) Transition Plan
    e) Publications
    f) Meetings and Presentations
    g) Project Plans
    h) Near term Objectives
  2) Financial Report
  3) Project Status / Schedule

(b) Project Summary (PSum): Due once each fiscal year in July
1) All Sections of the Status Report
2) QUAD Chart
a) Visual Graphic
b) Impact
c) New Technical Ideas
d) Schedule

PROPOSAL FORMAT

Proposals shall include the following sections, each starting on a new page (where a "page" is 8-1/2 by 11 inches with type not smaller than 12 point) and with text on one side only. The submission of other supporting materials along with the proposal is strongly discouraged. Sections I and II of the proposal shall not exceed 18 pages. Maximum page lengths for each section are shown in braces {} below.

Section I. Administrative

{1} Cover Page including: (1) BAA number; (2) Technical topic area; (3) Proposal title; (4) Technical point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address; (5) Administrative point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address; (6) Summary of the costs of the proposed research, including total base cost, estimates of base cost in each year of
the effort, estimates of itemized options in each year of the effort, and cost sharing if relevant; and (7) Contractor's type of business, selected from among the following categories: "WOMEN-OWNED LARGE BUSINESS," "OTHER LARGE BUSINESS," "SMALL DISADVANTAGED BUSINESS [*Identify ethnic group from among the following: Asian-Indian American, Asian-Pacific American, Black American, Hispanic American, Native American, or Other*]," "WOMEN-OWNED SMALL BUSINESS," "OTHER SMALL BUSINESS," "HBCU," "MI," "OTHER EDUCATIONAL," "OTHER NONPROFIT", or "FOREIGN CONCERN/ENTITY."

Section II. Detailed Proposal Information

This section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and payoff of the proposed work that make it desirable to DARPA.

[IMPORTANT NOTE: WITH THE EXCEPTION OF E, C THROUGH H HAVE BEEN REVISED.]

A. {1} Innovative claims for the proposed research. This page is the centerpiece of the proposal and should succinctly describe the unique proposed contribution.

B. Technical Approach:

1. {6}Detailed Description of Technical Approach. Provide detailed description of technical approach that will be used in this project to achieve research goals. Specifically identify and discuss innovative aspects of the technical approach.

C. {1} Statement of Work (SOW) written in plain English, outlining the scope of the effort and citing specific tasks to be performed and specific contractor requirements.

D. Schedule and Milestones:

1. {1}Schedule Graphic. Provide a graphic representation of project schedule including detail down to the individual effort level. This should include but not be limited to, a multi-phase development plan which demonstrates a clear understanding of the proposed research; and a plan for periodic and increasingly robust experiments over the project life that will show applicability to the overall program concept. Show all project milestones. Use absolute designations for all dates.

E. {2}Deliverables Description. List and provide detailed description for each proposed deliverable. Include in this section all proprietary claims to results, prototypes, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are no proprietary claims, this should be stated. The offeror must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights (see DFARS 227.) Specify receiving organization and expected delivery date for each deliverable.

F. {1} Technology Transition and Technology Transfer Targets and Plans. Discuss plans for technology transition and productization. Identify candidate military and commercial end user organizations for HPCS technology transfer and use.

G. {1} List of key personnel, concise summary of their qualifications, and discussion of proposer's previous accomplishments and work in this or closely related research areas. Indicate the level of effort to be expended by each person during each contract year and other (current and proposed) major sources of support for them and/or commitments of their efforts. DARPA expects all key personnel associated with a proposal to make substantial time commitment to the proposed activity.

H. {1} Description of the facilities that would be used for the proposed effort. If any portion of the research is predicated upon the use of Government Owned Resources of any type, the offeror shall specifically identify the property or other resource required, the date the property or resource is required, the duration of the requirement, the source from which the resource is required, if known, and the impact on the research if the resource cannot be provided. If no Government Furnished Property is required for conduct of the proposed research, the proposal shall so state.

I. {1} Experimentation and Integration Plans. Offerors shall describe how their results could be integrated with solutions that other contractors are currently developing or are likely to develop. In addition, offerors should identify experiments to test the hypotheses of their approaches and be willing to work with other contractors in order to develop joint experiments in a common testbed environment. Offerors should expect to participate in teams and workshops to provide specific technical background information to DARPA, attend semi-annual Principal Investigator (PI) meetings, and participate in numerous other coordination meetings via teleconference or Video Teleconference (VTC). Funding to support these various group experimentation efforts should be included in technology project bids.

J. {2} Cost by task, with breakdown into accounting categories and equipment for the entire contract and for each contract year. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as contract options with separate cost estimates for each. Details of any cost sharing should also be included.

MANDATORY!

K. Contractors requiring the purchase of information technology (IT) resources as Government Furnished Property (GFP) **MUST** attach to the submitted proposals the following information:

1. A letter on Corporate letterhead signed by a senior corporate official and addressed to **Mr. Robert B. Graybill,** DARPA/ITO, stating that you either can not or will not provide the information technology (IT) resources necessary to conduct the said research.

2. An explanation of the method of competitive acquisition or a sole source justification, as appropriate, for each IT resource item.

3. If the resource is leased, a lease purchase analysis clearly showing the reason for the lease decision.

4. The cost for each IT resource item.

IMPORTANT NOTE: IF THE CONTRACTOR DOES NOT COMPLY WITH THE ABOVE STATED REQUIREMENTS, THE PROPOSAL WILL BE REJECTED.

Awards made under this BAA may be subject to the provisions of the Federal Acquisition Regulation (FAR) Subpart 9.5, Organizational Conflict of Interest. All offerors and proposed subcontractors must affirmatively state whether they are supporting any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports, and identify the prime contract number. Affirmations should be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest, as that term is defined in FAR 9.501, must be disclosed in Section II., G of the proposal, organized by task and year. This disclosure shall

include a description of the action the Contractor has taken, or proposes to take, to avoid, neutralize, or mitigate such conflict.

Section III. Additional Information

A bibliography of relevant technical papers and research notes (published and unpublished) that document the technical ideas, upon which the proposal is based, may be included in the proposal submission. Provide one set for the original full proposal and one set for each of the **4** full proposal hard copies. Please note: The materials described in this section, and submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal for evaluation purposes.

The administrative addresses for this BAA are:

Fax: 703-522-7161 Addressed to: DARPA/ITO, BAA 02-09
Electronic Mail: baa02-09@darpa.mil
Electronic File Retrieval: http://www.darpa.mil/ito/Solicitations.html

Mail to: DARPA/ITO
ATTN: BAA 02-09
3701 N. Fairfax Drive
Arlington, VA 22203-1714